# EFFICIENCY FIRST CALIFORNIA AND CALIFORNIA BUILDING PERFORMANCE CONTRACTORS ASSOCIATION COMMENTS ON CALIFORNIA ENERGY COMMISSION STAFF REPORT: *COMPREHENSIVE ENERGY EFFICIENCE PROGRAM FOR EXISTING BUILDINGS SCOPING REPORT* (August 2012 — CEC-400-2012-015 — Docket No. 12-EBP-1)

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# Introduction

Efficiency First California (EFC) and the California Building Performance Contractors Association (CBPCA), which represent home performance contractors throughout California, welcome the opportunity to comment on and make suggestions to the *Comprehensive Energy Efficiency Program for Residential Buildings Scoping Report* (Scoping Report). CBPCA advocates on behalf of contractors who participate in the various Energy Upgrade California™ programs and is California's acknowledged leading provider of Building Performance Institute (BPI) standards training. CBPCA is the current primary administrator of the Sacramento Municipal Utility District's (SMUD) whole house performance program, the former primary administrator of PG&E's whole house performance program, the post-retrofit Quality Assurance contractor for PG&E's efforts in the SMUD service area, and the sole training subcontractor for the Southern California Edison/SoCalGas program.

A fundamental concern we have with the Scoping Report is its appearance, at times, as a conclusive policy report rather than a true scoping report that identifies problems or issues and a methodology to gather relevant data for the purposes of analyzing such problems and complying with the requirements of AB758 (discussed below) in a subsequent document. In some cases, the Scoping Report appears to reach certain conclusions prematurely without proposing or undertaking a deliberative and objective analytical approach relying on the best available evidence.

Also, AB758 requires the Energy Commission, in developing the program requirements, to consider, among other things, "the most cost-effective means and reasonable timeframes to achieve the goals of the program" and requires the program, in absolute terms, to "minimize the overall costs of establishing and implementing comprehensive energy efficiency requirements." It is unclear from the Scoping Report whether the Energy Commission has complied with or intends to comply with these requirements. We believe it is incumbent on the Energy Commission to undertake a thoughtful cost-effectiveness analysis of various compliance pathways, as early in the development of the program as possible, to fully comply with the requirements of AB758 and to demonstrate to the Legislature that it has complied with its mandate to the fullest extent possible.

Accordingly, we request that the Energy Commission clarify the specific evidentiary steps it intends take in order to build a meaningful and informative record on which to tackle the challenge of improving the energy efficiency of the state's existing buildings. The Energy Commission should also clarify whether it intends to release for public review and comment the deliverables, including the "needs assessment" prepared by its consultant pursuant to the AB758 Technical Support Contract Scope of Work (attached). It is possible that much of the data or information serving as the basis for the Scoping Report was collected from these deliverables. If so, the public would undoubtedly benefit from the release of this information.

Finally, we encourage the Energy Commission staff to meet with key stakeholders and create key-stakeholder task groups to work together on creating an actionable plan with which to move forward.

Included in this document are the *Home Performance Contractors Desired Outcomes* and *Energy Upgrade California™ Contractor's Workflow* documents in appendices A and B, which contain further details about opportunities for optimizing the building performance marketplace.

Please email me with questions or points of clarification to this document: Conrad Asper, Efficiency First California/CBPCA Executive Director, conradasper@thecbpca.org.

## *Growing a Scalable Marketplace to Meet State Energy Goals*

As the Scoping Report states: "A capable and committed contractor community, a sufficiently aware population of building owners, and simple access to affordable capital are fundamental requirements for achieving scale in the state's building upgrade activity.… In a pragmatic and structural sense, **it is contractors who must drive the retrofit marketplace**; **they must have the tools and program support to do so effectively and efficiently**. At the same time, they and other actors … must **be aligned and committed to the best interests of the upgrade customer**."[1]

Efficiency First California and CBPCA agree.[2]

As the second largest source of California greenhouse gas emission, buildings represent a powerful opportunity to address environmental and economic challenges through the widespread upgrade of existing residential and non-residential buildings. To meet this goal requires upgrading millions of California homes and businesses, engaging thousands of qualified building performance companies, and making energy upgrades the most popular building improvement project.

According to *Deep Energy Savings in California Homes: A New Vision*: "Among the initiatives supporting AB32, the Public Utilities Commission's *Energy Efficiency Strategic Plan* sets a target for the state's entire existing housing stock to achieve an average energy efficiency savings of 40 percent from 2008 levels by the end of 2020.… By 2050, the State's AB32 carbon reduction goal is increased to 80 percent of 1990 levels, requiring unprecedented future savings requirements in all energy sectors including all existing housing units."[3]

The *New Vision* report goes on to state the 11.5 million dwelling units served by California Investor Owned Utilities represent 85 percent of the state's total housing stock and include 4.8 million (41 percent) single-family, owner occupied homes, 3.8 million (33 percent) single-family renter occupied homes, and 2.3 million (20 percent) multi-family units.

To calculate how many building performance companies will be needed to meet this demand, we assume each Participating Contractor company will need to be a professionally managed energy retrofit division or stand-alone company capable of producing three residential retrofits per week costing on average

[1] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, pages viii and ix.
[2] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012, Policy Environment (#1) and Program Design and Implementation (#3A).
[3] *Deep Energy Savings in California Homes: A New Vision,* R. Knight, Fable, S., and Brown, R., 2012 ACEEE Summer Study on Energy Efficiency in Buildings (8-169).

between $14,000 and $20,000 per project to produce 150 projects per year with annual revenues of approximately $3 million while hiring a minimum of 20 employees each.

With above assumptions, we will need a total of 7,700 Participating Contractor companies including 3,200 to upgrade the single-family owner occupied homes eligible for State program incentives, an additional 2,533 companies to upgrade single-family renter occupied homes, and 1,533 companies to upgrade multi-family properties.

This is an unprecedented undertaking requiring the alignment of massive state, utility, and industry resources in a multi-year effort. To meet this challenge: "Regulators and implementers must treat contractors less as adversaries and more as partners in this effort. Current programmatic complexity for contractors, such as complex simulation modeling, data reporting, excessive quality assurance protocols, and energy rating system complications, must be reversed. Increased direct support to contractors is needed in equipment purchases, training, and co-funding of marketing initiatives," according to the authors of *Deep Energy Savings in California Homes: A New Vision.* And we agree.

To establish a scalable marketplace capable of this task, we believe the State, in collaboration with contractors and other stakeholders, must create an exciting, innovative, and cost-effective environment that can attract the thousands of building performance companies needed for the job. The State must also support early adopter companies that take the risk to demonstrate the potential for success to contractors considering investing their time and money in the building performance industry. If we don't make this new marketplace compelling and exciting, we will not reach our program goals and/or our desired outcomes (see Appendix A — *Home Performance Contractor Desired Outcomes*, Introduction and Contractors' Desired Outcomes sections).

## Energy Assessments and Ratings — Residential Buildings

As discussed in the Scoping Report: "Public Resources Code Section 25942 requires the Energy Commission to establish the California HERS Program to certify home energy rating services in California. The statute requires that ratings be based on a single statewide rating scale and include estimates of potential utility bill savings and recommendations on cost-effective measures to improve energy efficiency. The statue requires the Energy Commission to develop training, certification, and quality assurance procedures for Raters; database and reporting requirements; and labeling procedures. The statute prescribes that once the Energy Commission adopts the California Home Energy Rating System through regulation, no home energy rating services may be performed in the state unless the services have been certified by the Energy Commission to be in conformity with the program criteria adopted by the Energy Commission. The program goal is to provide reliable information to differentiate the energy efficiency levels among California homes and to guide investment in cost-effective home energy efficiency measures."[4]

Pursuant to the above authority, which became effective in the early 1990s, the Energy Commission developed an asset rating system for rating new homes. Over time the Energy Commission staff attempted to adapt the rating system to existing residential buildings. At first, the home performance contractor

[4] *Comprehensive Energy Efficiency Program for Existing Buildings*, California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 49.

community agreed with and supported this vision, but as the system has been tested over time for the existing residential market, the ideas and opinions of the HP contractor community have matured and we now recognize that this approach is extremely costly, inaccurate, confusing to home owners, and not scalable.

While AB758 instructs that there is a process to determine a path forward, we are concerned that to date, the Energy Commission has been executing on a specific vision for how they intend to implement AB758.

This current vision starts with the concept of a HERS rating, a system that is essentially "code for existing buildings" meaning it relates a home to a code compliant version of the same home. With the notion that we can create a system where an Energy Commission tool will provide a miles-per-gallon (MPG) style rating, we set up the questionable expectation that it will also produce an investment quality prediction of savings that will drive decisions and rebates. This notion is reinforced by the plan to require these ratings at various points such as time of sale, remodel, or perhaps just based on a schedule. In the future, as we hit Phase III of AB758, there will be some sort of regulatory requirement that will compel action, like code.

This goal of a one-size-fits-all system has been problematic from the start; however, after three years of using the HERS whole-house program in the field, we have some data. It turns out that there are a few key issues (inaccuracy of modeled savings vs. actual energy use savings, and cost are the most crucial).

First, there have been substantial issues related to accuracy of the HERS whole-house rating model. One study funded by an Energy Commission PIER grant showed that when you compare predicted to actual savings in Energy Upgrade California based on EnergyPro 5 and the HERS system, it showed that the model was over-predicting savings by 50 percent (a 30 percent predicted savings, delivers an average of 20 percent), and that 78 percent of homeowner are not achieving the savings predicted.

If we use a regulatory hammer to force California homeowners to first, spend $5 billion in just getting energy ratings (10M homes X $500 per rating), and then require them to make investments that statistically do not have expected paybacks, we are in essence turning energy efficiency into a tax, and we believe while there may be regulatory authority to implement this plan, there is likely not political capital to see it through.

Here is an example of what this approach will mean to potentially millions of California homeowners. As we depart from early adopters, we are going to move to a market where we are compelling millions of California homeowners to invest in energy efficiency. As we get deeper into the market, we will see an increase in the number of homeowner who are underwater on their mortgages, in the low-to-mid income brackets, and are laggards in terms of their interest. In the current model, we are going to be compelling these folks to make investments and we know in advance that even in best case scenarios there will be hundreds of thousands, if not millions, of families who see their net cost of energy increase — which for some low-to-mid income household will prove to catastrophic in this economy.

We simply do not have enough money to continue subsidizing energy efficiency at anywhere near the level we have over the last few years, and even with these huge subsidies we have only achieved perhaps 5 percent of our goals.

We need a different vision forward.

What may be appropriate for the new residential construction market may not necessarily have to be appropriate in the existing residential retrofit market no matter how much we want it to. These markets are very different and the motivations to voluntarily act and then regulate in new construction do not translate into the existing homes market. Unfortunately, in this case, one size does not fit all.

The Scoping Report does not appear to comprehensively address the appropriateness of HERS whole-house ratings from an objective perspective. We recommend that the Energy Commission re-evaluate this asset rating approach and determine its "appropriateness," including its efficacy and reliability, to support the goals of AB758 as directed by AB758. If it conducted such an objective evaluation, the Energy Commission may find, as we have, that the accuracy problems inherent in the asset rating approach make it a poor tool to support the program's market transformation goals (particularly with regard to the existing homes market), which depend so heavily on building consumer confidence.

Examining the appropriateness of an asset rating should necessarily involve, by default, an examination of alternative rating approaches, such as operational ratings to meet the goals of AB758.

Regardless of what direction the Energy Commission decides to pursue regarding the role of its HERS program in the marketplace via Public Resources Code Section 25942, the home performance contractor community sees no direct role for home ratings in the home retrofit process itself and requests that the Energy Commission recognize that treating any aspect of an energy upgrade project as a trigger to perform a rating is not appropriate to support achieving the magnitude of upgrade projects envisioned by the program. Instead we advise to keep the home energy "rating" process separate from the energy upgrade sales and retrofit process.[5]

Scoping Report: "In recent years, building rating systems have begun to proliferate throughout the United States and the world mostly as voluntary tools. However, policy makers increasingly view them as a way to label and promote more efficient buildings. This has been driven by the concept that ratings help create property value for energy efficiency and can be useful as a sales tool or for motivating competition, leading to actions to improve efficiency."[6]

The CBPCA and Efficiency First California would ask that the Energy Commission use caution in adopting a regulatory approach to building energy ratings in the existing residential market and agree with

[5] See Appendix A: *Home Performance Contractors Desired Outcomes*, Efficiency First California/CBPCA, September 2012, Policy Environment (#2, A-C).

[6] *Comprehensive Energy Efficiency Program for Existing Buildings*, California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 49.

the conclusions of the Lawrence Berkeley National Laboratory Clean Energy Program Policy Brief entitled "The Value of Energy Performance and Green Attributes in Buildings,"[7] which states:

> "These studies suggest that homebuyers and commercial building owners may pay more for a building that they know is rated as energy efficient. However, given the limited evidence, more studies are clearly needed to build a larger body of support for the market value of building labels, particularly in regard to the value of "green" labels that tout benefits in addition to the financial advantages of energy efficiency…
>
> "… Hedonic pricing models and appraiser valuations have been used for many years by the real estate market to determine home prices and the value of properties' components. Given larger datasets and data points as the number of labeled or rated homes grows, and applying these methods, future studies may well be able to quantify the value of "green" and energy efficiency upgrades with increasingly reliable results."

In addition we are very concerned that the inaccuracy of the modeled asset ratings vs. the actual energy savings may cause consumers to distrust home performance and the value of energy efficient retrofits in general. "Both the California and UK rating systems are based on a faulty notion that relative scores are more important than accuracy [of energy savings]," according to Matt Golden, in his July 30, 2012, blog "What can Energy Efficiency Ratings learn from the MPG?"[8]

Also, we believe that there has been much data collected over the past two years during the ARRA-funded programs that should be made publically available, and should be analyzed to inform the AB758 Draft Action Plan. We believe that analysis of this data will back our assertion that asset ratings are the wrong approach for California.

## *Trigger Events for Home Ratings*

Scoping Report: "Completion of post upgrade ratings could also be appropriate for upgrade projects that are recruited for participation in ongoing whole-house incentives programs… One way to address the potential problem of increased touches would be for the whole-house incentive program to build the rating into the program's QA process by avoiding QA visits by relying on the rating instead. Under this approach, the program would have to be convinced of the reliability of the rating for QA purposes."[9]

We recommend against the proposal to turn the rating process into a Quality Assurance service. To ensure effective projects, QA needs to be focused solely on maintaining and improving industry implementation of established standards and best practices, and providing as-needed mentoring for home performance professionals to constantly improve their skills and performance in what is a very complex profession.

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[7] *The Value of Energy Performance and Green Attributes in Buildings: A Review of Existing Literature and Recommendations for Future Research*, Lawrence Berkeley National Laboratory, Clean Energy Program Policy Brief, September 7, 2011.
[8] Efficiency.org, July 30, 2012, blog: http://www.efficiency.org/1/archives/07-2012/1.html
[9] *Comprehensive Energy Efficiency Program for Existing Buildings*, California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 61.

Asking the QA provider, upon whom the credibility and integrity of the industry depends, to perform two roles dilutes his/her attention; asking a HERS rater to perform two roles would require they also be fully qualified and experienced enough to provide QA services.

# Energy Efficiency Upgrade Programs

## *Financing Programs*

Scoping Report: "The CHF MIST I finance program provided below-market interest rates (0-3 percent), [and]15-year term loans to moderate-income single-family homeowners in CHF member and associate member counties and cities.…Many things were learned from this successful ARRA program.…A whole-house energy efficiency financing program with generous terms meets a clear market need."[10]

We agree affordable, and accessible, financing is a key tool for growing homeowner participation in the current economy. And an affordable program such as CHF does drive market demand, though we recognize that the government subsidized program is neither scalable nor sustainable. More financing options that provide affordable interest rates and/or accessible underwriting terms are needed to serve the wide variety of customer situations and needs. Access to a variety of financing tools (e.g., leasing tools, on-bill and repayment options, loan-loss reserves, Property Assessed Clean Energy [PACE], and Energy Efficient Mortgages) equips contractors to provide solutions for a range of financing needs. We also see a need for an online financing clearinghouse, so contractors have the tools "at the kitchen table" to complete project planning with their clients.[11]

## *Residential Whole House Upgrade Programs*

In describing the Retrofit Bay Area program, the Scoping Report states: "The program concluded that the complicated contractor credential requirements, lack of contractor knowledge of the marketplace and the benefits of home energy upgrades, and lack of homeowner trust in contractors to complete upgrades created obstacles in completing projects through the program.…Lack of project data from the utility caused programmatic problems with issuing regional and county matching rebates."[12]

This description captures some but not all of the elements of "program friction" (i.e., complications to project implementation caused by program processes) experienced by Participating Contractors. Program friction points not mentioned here include burdensome and inconsistent rebate and QA processes that delay projects and confuse customers. Creating a "zero program friction" environment by resolving program inefficiencies would allow current Energy Upgrade Participating Contractors to complete significantly more energy upgrade projects, and in turn attract more contractors to enter the program, which would lead to projects being done faster and more economically and thus, help scale and transform the industry. We must work toward the elimination of any unnecessary mandated or duplicative step or process that adds time or cost to the homeowner and contractor interaction. A simple sales,

[10] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 102.
[11] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012. Consumer Financing (#17 through #22).
[12] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 106.

implementation, and rebate process with streamlined Quality Assurance while meeting statewide policy goals and ensuring ratepayer dollars are spent wisely is possible can be accomplished through collaboration with Participating Contractors as program course adjustments are made.[13]

## *Mandatory Energy Upgrade Programs*

Scoping Report: "AB758 gives the Energy Commission the authority to develop regulations to achieve the legislative goals. This could include developing mandatory rating and labeling requirements and potentially include mandatory energy upgrades as a component of the program. For any mandatory program to be successful in achieving the objectives, there needs to be sufficient market infrastructure developed to support program implementation. The goal of the Energy Commission is to first establish and refine the appropriate tools and other supportive market infrastructure and attempt to accomplish program objectives through voluntary approaches before considering mandatory programs."[14]

We agree that voluntary participation is the best route to significant customer participation. That is why it is vitally important that government programs collaborate with the building performance industry to ensure customer satisfaction, resolve program barriers (e.g., confusing rebate rules, trying to integrate ratings into energy upgrade projects, multiple QA touches, and delayed rebates) and recognize and reward high quality, top performing contractors for their leadership, early investments in the industry and risk-taking deep energy reductions as examples to encourage broader industry growth.

## *Performance-Based Incentives*

Scoping Report: "A key strategy toward deeper retrofits is to develop "performance-based" incentive programs. Incentive strategies that are focused on promoting one type of technology over another provide a rebate to offset the incremental cost of the equipment, or the increased cost of the premium efficiency choice over the conventional technology choice. Performance-based incentive programs reward the customer based on the improvement in efficiency over the baseline. This approach encourages customers to implement as much efficiency as is feasible and cost effective, helping to promote deeper retrofits. However, initial attempts at delivering a performance-based incentive program, particularly in the residential sector, are far from perfect. The modeling approach currently used, as well as the existing administrative process, can be burdensome and prohibitive for contractors. While this does not indicate that the performance-based approach should be abandoned, it does caution program implementers to carefully consider underlying assumptions in program design and to learn from existing efforts. It is expected that the contractor community will be a key stakeholder in discussions to resolve these issues."[15]

To achieve a scalable market, rebate strategy and rebate process must be simplified to achieve zero program friction. It is time to revisit early assumptions around energy modeling, measuring, and administering rebates. It should be understood that the energy modeling currently required by the Energy Upgrade California program is not used by the contractors to plan or execute their work — it is solely used to determine rebate amounts, which creates inefficiencies and added contractor costs. The modeling

[13] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012, Program Design and Implementation (#3 through #4).

[14] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 111.

[15] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 114–115.

process for contractors and program managers as currently implemented is hugely expensive and creates tremendous program friction for all participants. We encourage collaboration with the building performance industry to seek a rebate process that is simpler and less expensive.. Such a collaboration would result in fresh approaches to incentive design.

## *Balance the Need for Quality Assurance/Quality Control with the Need for a Streamlined Program*

Scoping Report: "QA/QC procedures are an important part of a program. These policies mitigate against errors in program delivery, helping to ensure a quality project is installed that delivers on customer expectations and administrator requirements. However, it is important to establish a streamlined QA/QC process that is effective, yet quick and easy for the building owner and the contractor. Existing QA/QC procedures can cause multiple visits to one property, each involving time from the property owner to provide access to the building. It would be ideal if the QA/QC process were streamlined to eliminate multiple steps, visits, and players for the building owner. There is value in providing verification to the building owner that the project was completed to standard, but ideally this effort will be accomplished with minimal disruption to the building owner. The goal should be to have a properly trained and competent workforce to avoid callbacks and have only minimal disruptions to the building owner. For example, in the residential sector, a QA verifier and a HERS Rater could coordinate the visit to a home if the retrofit project also triggers Title 24, Part 6 requirements."[16]

### Contractor's Perspective on QA/QC

Quality work is essential to building robust consumer demand and confidence and ensuring industry best practices through implementation of consistent and effective standards. Ensuring quality begins with individual company Quality Control (QC) practices that ensure that company meets its client's goals as well as industry and program requirements; QC practices are part of a company's quality systems management and ensure the project produces the expected results.

Quality Assurance (QA) is a third-party inspection conducted to ensure projects comply with programmatic or code requirements (i.e., contractors are doing the right things the right way) and is essential for "providing confidence that quality requirements will be fulfilled," according to the International Standards Organization 9000 quality management standards. QA supports consumer confidence in program services and is a vehicle for contractor mentoring/education.

The current Energy Upgrade California™ QA program functions more like a QC process inserting third-party oversight throughout project implementation (from QA test-in to one or more QA test-out visits if a HERS whole-house rating is included). In some IOU service territories, 100 percent pre-/post-testing QA protocols have resulted in slow consumer uptake, hesitance among potential new market entrants concerned about maintaining a profitable business model, and dramatically slow pacing of job completion (potentially imposing as many as 11 home visits per project).[17] This approach underestimates the professional caliber of BPI-credentialed home performance contractors, creates a time and cost burden for

[16] *Comprehensive Energy Efficiency Program for Existing Buildings*, California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 116.

[17] See Appendix B: *Energy Upgrade California™ Contractor's Workflow*, Efficiency First California/CBPCA, September 2012.

the homeowner and contractor, and has suffered from inconsistent and arbitrary protocol implementation and inspector quality across programs.

The existing QA process for Energy Upgrade California is complicated and costly for customers and contractors and the CPUC agreed when it adopted its 2013−2014 Energy Efficiency Guidance Decision (D. 12-05-015) in May 2012 and directed IOUs to streamline and make consistent statewide the Energy Upgrade California job application/approval process. In this Decision, the CPUC stated that:

> …we believe that streamlining Energy Upgrade California program application and job approval procedures more generally is essential to developing contractor support for the program. We direct IOUs to include in their 2013−2014 Energy Upgrade California proposals a "Fast Track" Energy Upgrade California job approval protocol based on the HVAC Energy Replacement Protocol. This proposal should apply more generally to the Energy Upgrade California program. The intent of such a "Fast Track" Energy Upgrade California job approval protocol is to accelerate Energy Upgrade California job approvals for experienced Energy Upgrade California contractors with strong quality assurance records.[18]

We recommend an open market system for QA services based on a recognized industry standard, such as the BPI Quality Assurance Program; this model has enjoyed over a decade of success with the New York State Energy Research and Development Authority (NYSERDA) providing a 5 percent inspection rate and "QA on the QA" program that to-date has yet to identity a single significant issue.

This "open market system based on recognized industry standards" would level the playing field across all State programs for all contractors, improve statewide consistency and mobility for contractors working in multiple jurisdictions, and reduce overall program administration costs. Such an open system would need clearly documented protocols and standards so that everyone (inspectors and contractors alike) is "on the same page" and can effectively explain the process and the benefits to the customer. Contractors could also be rewarded for quality performance through a tiered QA sampling system that accommodates various levels of contractor skill and experience, and uses data collection showing pre-/post-conditions to flag poor performers in need of support or sanction. Conducting QA verification at the same time as contractor test-out, so both the QA provider and contractor are present, would improvement efficiencies and communication on QA issues, reduce the impact on the client, and demonstrate positive program collaboration. In addition, the integration of field mentoring during QA verification would help build contractor confidence, establish clear examples of what parameters are being measured in the field, enhance industry best practices, and support new entrants into the market.[19] For example, requiring test-out mentoring on the first three jobs of all Advanced Package contractors would create a QA process that is supportive and educational versus punitive. Contractors will be eager to participate because this process will validate their results.

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[18] *Decision Providing Guidance on 2013−2014 Energy Efficiency Portfolios and 2012 Marketing, Education, and Outreach,* California Public Utilities Commission, Rulemaking 09-11-014, Decision 12-05-015, May 10, 2012

[19] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012, Quality Assurance and Quality Control (#27 through #34).

We are fortunate that three potential alternatives to the current QA situation have been identified by industry standards leader BPI based on the successful NYDSERDA program that provides dual protections for consumers and contractors.

## Alternative 1: "QA on the QA" Program

The first alternative would provide training for program QA providers and provide "QA on the QA" supervisors certified in nationally recognized industry standards, such as BPI's qualified QA provider network, for both office and on-site inspections. Using QA providers trained in national standards to monitor and mentor program QA staff would ensure a consistent QA reporting mechanism for consistency and quality data sharing for the entire statewide program, as well as technical support on standards implementation and interpretation and dispute resolution assistance in case of QA provider and contractor disagreement. This would ensure consistent QA for all Energy Upgrade California Participating Contractors, and improve the cost-effectiveness of the statewide program QA process. No matter what entity provides the service, a statewide "QA on the QA" program based on recognized national standards is essential so there is a clear and consistent message from QA providers that helps contractors deliver the full measure of energy performance and health and safety benefits.

## Alternative 2: Contractor Service

The second alternative would use BPI's qualified QA providers network to provide a truly neutral, third-party QA service directly to all Energy Upgrade California Participating Contractors at agreed upon and predictable inspection rates, and using BPI QA protocols and BPI QA reporting process and appropriate data sharing schemes through the adoption of a BPI Accreditation requirement

## Alternative 3: Program Service

The third alternative would provide the Energy Commission, utilities, and Participating Contractors with consistent, qualified statewide QA services via a nationally recognized standards provider, such as the BPI QA provider network, with no additional cost burden on the contractors, and likely substantially reduced cost to the programs.

The Energy Commission recognizes the importance of reducing administrative obstacles and burdens on contractors. The alternatives outlined above are based on the BPI QA Program, which has been developed, tested, and used in other major energy efficiency programs for over a decade, and meets the cost-effectiveness requirements needed to support contractor participation.

In addition to delivering a streamlined and consistent QA process, a statewide QA program based on nationally recognized standards would be cost effectiveness as demonstrated by comparing current QA implementation costs per project to the cost of current industry QA services such as BPI accreditation QA.

We recommend considering these alternatives to ensure QA services are consistent with national standards across the state.

# Workforce Development

Scoping Report: "Alignment of workforce training, standards, and certification with state policy is necessary to ensure that the workforce has the capacity, skills, and knowledge required to meet California's energy efficiency policy goals.… California leads the nation in clean energy investments, and through judiciously crafted energy efficiency policies and strategic partnerships with state and local government, education, and industry, the state can catalyze the creation of well-paying jobs for California's workers and the expansion of quality, credential-based training to ensure high standards are met for energy efficiency measures in support of AB 758."[20]

The success of the entire building efficiency program depends on qualified contractors executing high-quality jobs profitably and rapidly. Building a well-trained, effective workforce means committing to recognized industry standards, such as Building Performance Institute (BPI) Certification and Standards, in order to lay the foundation for workforce consistency, national recognition, and continuous improvement.

It is difficult to build a business in an environment of changing requirements. Therefore, it is important to actively participate in national efforts to improve standards and certifications that will create consistent best practices and clear expectations for contractors considering investing in home performance construction. Commitment to proven standards will also attract seasoned construction workers into this emerging industry.

Because ARRA-funded Energy Upgrade California workforce development programs focused primarily on Building Performance Institute (BPI) Building Analyst certification in order to qualify contractors to provide the Advanced Package service and incentive, we currently have many technically trained contractors with a narrow range of very basic skills. However, in order to build a comprehensive building performance industry equipped to grow at speed and scale to meet State energy goals, we must provide advanced training in all skills needed for success, including competence in business, sales and marketing, quality control, and installation expertise.

Moving forward, Building Science principles must remain the foundation for the next phase of workforce development; acquiring the skills required for the hands-on application of these principals.[21] As the marketplace becomes more aware of the benefits of energy savings, safety, and comfort provided through the application of home performance best practices, there is a growing demand for an ever larger pool of "highly skilled" contractors and, just as critical, readily available and equally highly-skilled technical workers. This market demand is already defining the need for existing and new types of technical, hands-on training. In order to maintain this momentum, contractors and their crews must have the essential skills to provide services that meet the requirements of these high-performance approaches.

Marketing, sales, and business management training for home performance companies is also essential. For most contractors, moving into whole building performance is a business model shift that needs

[20] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 36.

[21] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012, Workforce Development (#5 through #11).

planning. Selling whole building performance also requires specialized communication skills that are not always held by technical personnel such as building analysts or energy auditors, although some do acquire those skills and become effective sales people.

To build a robust industry, workforce development must be readily accessible, affordable, and more broadly defined in terms of technical training and mentoring at the auditor, crew leader, installation, and internal quality control levels, as well as the Quality Assurance inspector level. And as new contractors enter the home performance industry, it will be increasingly important to leverage other existing specialty certifications, such as HVAC installer certifications (e.g., North American Technician Excellence), that are not covered — but are recognized — by BPI for accreditation purposes.

Growing companies will need pre-qualified, credible, new-hire candidates from workforce development programs, community colleges, and trade tech systems to fill a range of positions including field crew jobs. Numerous post-secondary schools throughout California are ready, willing, and eager to prepare new-hire candidates, but need to collaborate with industry partners to ensure they provide training to address single family and multifamily properties as well as low-income weatherization and building performance professions. Growing companies will also need incentives and/or financing to underwrite contractor investments in equipment.

# Data Needs for Decision Support

Scoping Report: "The market succeeds when data is available not only to inform program design and evaluation efforts, but also to enable contractors, investors, entrepreneurs, and other essential market actors in their business decisions."[22] "There is tremendous value in centralizing all energy performance data into one place." "All parts of the market should have access to it."[23]

We agree that data collection should be centralized and accessible to multiple stakeholders, and we support the development and adoption of national standards for data collection, calibration, and data transfer protocols.[24] There are emerging initiatives that hold promise to utilize smart meter data to inform decision making by homeowners, business owners and contractors. We believe the path towards utilizing operational data (instead of focusing our limited resources on asset data accumulation) is the most cost effective approach, and is much more likely to lead to the rapid innovation from the private sector that we need to reach our desired outcomes.

As stated above, we believe that there has been much data collected over the past two years during the ARRA funded programs that should be made publically available.

[22] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page xiv.
[23] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 141.
[24] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012, Administration and Reporting (#25).

# Reaching Property Owners and Public Awareness: Marketing, Education, and Outreach

## Urgent and Visible Message

Scoping Report: "Marketing, education, and outreach are three complimentary strategies that collectively comprise the public-facing aspect of a program.… A marketing, education, and outreach program is intended to motivate consumers to take a specific action.… Advertising is used to broadcast messages through traditional media channels – television and radio ads, print ads, and billboards. Outreach compliments marketing activities by delivering the same message through on the ground messengers, such as building industry professionals, program staff, local government, business and community leaders, and non-profit organizations. Education overlaps with outreach, and is designed to inform consumers about the 'why' to take action."[25]

The vast majority of the public has not yet heard of Energy Upgrade California, or that buildings are one of the largest contributors to global warming in the U.S. and that there is a solution (whole-house upgrade) that also provides multiple other economic and life-enhancing benefits. Building performance professionals understand and embrace their role in both building an industry and serving the public good through effective building upgrades that reduce greenhouse gas emissions.

The industry recommends the market transformation effort convey a sense of urgency about the environmental and economic benefits of taking action as well as the environmental and economic consequences of inaction. Chief among those engaging this important community dialogue ,we recommend enlisting our State's leaders including elected officials, government officials, utility representatives, and other high-profile and well-respected spokes people from throughout the state, regional, and local communities.[26]

Scoping Report: "Other critical partners and messengers are building industry professionals, other energy professionals, and facility managers, who often are the first point of contact with a property owner or decision maker. … Provide resources for existing outreach channels to enable their ability to spread the message on behalf of the program, including cooperative marketing resources for building industry professionals.[27] … Foster innovation at the local and regional level to support new or emerging marketing and outreach models, such as … the Cooperative Marketing approach piloted in four regions (Bay Area, Sacramento, Los Angeles, and San Diego).… The more successful programs encouraged a high level of innovation by participating contractors."[28]

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[25] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 131.

[26] See Appendix A: *Home Performance Contractors Desired Outcomes,* Efficiency First California/CBPCA, September 2012, Public Education and Marketing (#12, #13, #14, #16).

[27] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 138.

[28] *Comprehensive Energy Efficiency Program for Existing Buildings,* California Energy Commission Staff Report, August 2012, CEC-400-2012-015, page 139.

Most home performance professionals are experienced lead generators who know how to find customers and turn interest into action once they are at the kitchen table. Coop marketing programs leverage both State and contractor resources for a double benefit, and allow contractors ― who know their audience and market ― to focus those dollars on high-yield lead generation with a greater capacity to produce completed projects. We highly support the use of coop marketing and recommend a significant portion of MEO resources be committed to coop marketing.[29] It is important that contractors are included and involved at higher levels of discussion and authority in order to more quickly illuminate implementation barriers as well as provide practical suggestions for flexibility and speed improvements to the process.[30]

[29] See Appendix A: *Home Performance Contractors Desired Outcomes*, Efficiency First California/CBPCA, September 2012, Public Education and Marketing (#15).

[30] See Appendix A: *Home Performance Contractors Desired Outcomes*, Efficiency First California/CBPCA, September 2012, Policy Environment (#1, #1-A).

At the Request of the California Energy Commission

# Home Performance Contractor Desired Outcomes

## *The Contractor's Perspective*

Efficiency First California and California Building Performance Contractors Association



10/23/2012

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## Introduction

At the request of the California Energy Commission (CEC), the California Building Performance Contractors Association (CBPCA) and Efficiency First California (EFC) would like to submit the enclosed list of topics that we believe, if addressed and implemented, would assure a successful market transformation with respect to AB32, AB758, and the Energy Upgrade California™ initiative. We are focusing here on describing critical issues and clarifying desired outcomes, and not necessarily solutions. Deriving solutions is the purpose of our ongoing dialogue.

## Contractors' Desired Outcomes

**Successfully upgrade all residential and light commercial buildings for energy efficiency in order to help the State reach its climate goals: Reaching 1990 levels of GHG emissions by 2020 and achieving 33 percent electricity from renewable sources.**

To affect this outcome, we are working to:

1. Increase the quality, economic value, number, and speed of energy efficiency upgrades in buildings
2. Achieve an average of 40 percent energy savings in the State's entire housing stock by 2020 and an 80 percent savings by 2050 (reducing GHG and increasing impact of renewables)
3. Stimulate the State's economy by creating thousands of jobs at the local level
4. Transform the construction industry into experts in whole-building energy efficiency, increase public awareness of energy upgrade benefits, and build a long-term industry
5. Play a lead role in the emerging consumer-friendly market transformation known as Energy Upgrade California by maintaining effective partnerships with other market stakeholders such as local governments, investor-owned- (IOU) and public-owned-utilities (POU), and allied clean energy industries such as efficiency technology manufacturing/distribution, renewable energy generation, water conservation, and sustainable materials.

## Contractors' View of Present Situation

To achieve these outcomes, **we feel that major changes must be made** to the State, IOU, and local government incentive programs that comprise Energy Upgrade California (Energy Upgrade). Factors such as the impact of the economic recession on homeowner purchase decisions,[1] homeowner perception that energy upgrades are costly, the lack of homeowner awareness of the multiple and long-term benefits of energy efficiency upgrades, the lack of affordable financing options, and excessive contractor overhead and administrative costs imposed by prohibitive Energy Upgrade program requirements have resulted in the following:

1. Market penetration, energy saving levels, and rates of energy upgrades executed are far below the early market penetration trajectory needed to meet the state-specified carbon reduction goal by 2020.

[1] See *Delivering Energy Efficiency to Middle Income Single Family Households,* Lawrence Berkeley National Laboratory, 2011, http://middleincome.lbl.gov/

2. Given the disparity between achievements and trends-to-date versus the strategic State goal, it is imperative that some of the outcomes listed below be radical improvements rather than incremental and that a sense of urgency on most topics will be necessary.

## Policy Environment — Desired Outcomes

1. There is an **urgent need for higher-level regulatory and utility management support for program flexibility and speed**. Too often it seems that the implementation of important climate goals mandated by AB32 and now AB758 are relegated to lower level program managers who do not have adequate authority to take the most efficient path to achieve timely program success.

   A. **Contractor participation at higher levels of discussion and authority** would more quickly illuminate implementation barriers as well as provide practical suggestions for flexibility and speed improvements to the process. We would advocate the recruitment of the top Energy Upgrade contractors (chosen for business acumen and/or whole-systems expertise in producing 40 percent or more energy reductions) across the state to participate in program design.

2. **We support the purpose of a Home Energy Rating System** as stated in AB 758 — given the three following caveats:

   A. **Keep the home energy "rating" process separate from the energy upgrade sales and retrofit process** or create program flexibility that will allow contractors to conduct their sales and retrofit process without the *program friction* (that is, complications to project implementation caused by program processes) of accommodating a parallel and simultaneous rating process that delays project implementation, requires additional home visits, and causes consumer confusion regarding the function of a rating versus a contractor test-in/project scope inspection. The rating process should be separate and optional for Energy Upgrade customers.

   B. **Create a rating method that is supported by building scientists and contractors** — not just regulators and program managers. As currently conceived, the California Whole-House Home Energy Rating (that is, HERS Whole House Rating) is seen *as inaccurate, confusing, too costly,* and *potentially damaging to market confidence* once the inaccuracy of system's energy savings estimates are demonstrated in the marketplace. As currently conceived, the HERS Whole House Rating program is not supported by the states' leading building scientists and the majority of leading-edge home performance contractors, and its required use in the California Public Utility Commission (CPUC) building efficiency program has been deferred. This lack of support by industry experts is a huge program design schism that will drag down program implementation statewide.

   C. **Create both an operational analysis and an asset rating system (or a combination)** to serve both contractor project planning and State energy evaluation needs. Building performance contractors are concerned that confidence in performance outcomes are and will continue to be eroded by inaccurate asset modeling and a lack of post-upgrade performance data based on actual energy usage. Innovation (both in upgrading buildings and manufacturing equipment) and market financing tools are dependent on reliable and predictable energy performance outcomes.

## Program Design and Implementation — Desired Outcomes

If program inefficiencies are resolved, current Energy Upgrade Participating Contractors will complete significantly more energy upgrade projects, which in turn will attract more contractors to enter the program and jobs will be done faster and more economically. Also, it is imperative to embrace the Participating Contractors as principal allies, not potential liabilities to be guarded against.

3. **Zero program friction with a continual increase in quality, safety, performance metrics, and proper data collection** for contractors and their customers during the sale and implementation of Energy Upgrade projects. Different IOU programs throughout the state have differing levels of program friction that complicates the process of project approval, information transfer, and incentive delivery, which taken together slow down the sale and/or execution of Energy Upgrade projects. **We must work toward the elimination of any mandated step or process that adds *time or cost* to the homeowner and contractor interaction**, which is already a complex process involving marketing, selling, and executing energy upgrades. **A universal sense of urgency, program innovation, and flexibility must be incentivized at all levels** — *while continually improving quality, safety, performance metrics, and data collection needs*. Contractors currently feel left out of the program design and improvement process. Many Contractors are not entering this field because of program confusion and complications — others are dropping out and/or doing work outside the program.

    A. **Contractors must be an ongoing, integral part of strategic program design** — not brought in after the design process to vet incremental program design elements.

    B. **Pre-project job approvals should be immediate** — with streamlined quality assurance/quality control (QA/QC) protocols implemented post-project.

    C. **Program managers and IOU sub-contractor/consultants must be incented for timely processing of projects** — to prevent departmental sub-optimization and minimize silo effects.

    D. **Separate home energy ratings from IOU Energy Upgrade program operations** — to reduce market confusion, program overhead cost (for both program managers and contractors), and program friction.

    E. **Eliminate the duplication of test in and test out** by contractor and IOU QA staff on all jobs — we recommend a phased QA process for new Participating Contractors starting with 10 percent, then 5 percent, and finally 0 percent inspections with zero program friction to process.

    F. **Create a more efficient QA/QC system that is outside of the sales and construction process**. (See Quality Assurance and Control — Desired Outcomes section.)

4. **Simplify rebate strategy and rebate process to achieve zero program friction. It is time to revisit our early assumptions around energy modeling, measuring, and administering rebates.** It should be understood that the energy modeling currently required by the program is not used by the contractors to plan or execute their work — it is solely used to determine rebate amounts. The modeling process for contractors and program managers as currently implemented is hugely expensive and creates tremendous program friction for all participants.

A. **Seek a rebate process that is simpler and less expensive.** This would save millions of dollars in program and contractor overhead. In the future, if homeowners were rewarded for additional post-project, behavior-based savings as documented through their utility bill, they would better understand their role and become active participants in the process of saving energy.

B. **Tie rebates to energy performance**, if it becomes desirable and feasible. Homeowners, contractors, and IOU, State, and local government programs must ultimately be able to produce reliable energy reductions and establish an approach to estimating energy savings that contractors and homeowners can use with confidence as they assess project benefits and value. Given the complex nature of energy modeling and the critical value (to contractors and homeowners) of a reliable approach to estimating energy savings, we propose enacting immediate pilot studies and data collection around various solutions to this issue with the goal to achieve a workable approach by 2015.

   *i.* **Leverage rebates based on reliable energy savings estimates to support contractor sales process**. By providing a simplified, more accurate, and less costly rebate process that includes energy bill calibration and produces reliable energy savings estimates , contractors would be more likely to guarantee savings and rebate amounts within an acceptable range because they would very quickly learn what combination of measures are most effective in actual energy reduction.

## Workforce Development — Desired Outcomes

The success of the entire building efficiency program depends on qualified contractors executing high-quality jobs profitably and rapidly. Currently, we have many technically trained contractors but simply do not have enough advanced training in the full range of relevant topics including competence in business, marketing, quality, and installation expertise.

5. Fund more widespread and more broadly defined **technical training and mentoring at installation level** — do not emphasize auditing/rating as sole training requirements.

6. Also fund **marketing, sales, and business management training** for home performance companies.

7. Deliver sufficient **pre-qualified, credible, new-hire candidates** to upgrade contractors through workforce development programs, community colleges, and trade tech systems. Finding qualified new-hires for field crews is currently a huge bottleneck.

8. **Commit to BPI Certification and Standards** as the foundation of the workforce.

9. **Avoid "retooling"** required certifications with each new program cycle

10. Offer incentives and/or **financing for necessary contractor investments** in equipment.

11. Participate actively in **national efforts to improve standards and certifications** that will create consistent training and certainty for contractor investment.

## Public Education and Marketing — Desired Outcomes

The vast majority of the public has not yet heard of Energy Upgrade California, or that buildings are the largest contributors to global warming in the U.S. and that there is a solution (whole-house upgrade) that also provides multiple other economic and life-enhancing benefits.

12. **Urgency, visibility, and validity about the power and benefits of energy efficiency**.

    A. **Convey a sense of urgency** to the public about of the size and scope of our energy and greenhouse gas emissions problems and the incredible power of building efficiency to provide a solution.

    B. Make sure marketing programs leverage **on-going and frequent validation from the most visible politicians and state leaders** — IOUs, CPUC, CEC, Governor, Senators, Mayors, Supervisors, movie stars, and other high-profile and respected leaders.

13. Whole-house upgrades should be marketed as **the "ultimate step" that offers more total value than the many simpler single-measure options** by all IOU and local government programs and contractors. Combine whole-building upgrade marketing with all other efficiency opportunities, including behavior change, in all State, County, and IOU energy efficiency education efforts.

14. **Institute *hyper-local* marketing/education programs** that coordinate City Hall and community organizations with specific contractors for both wide and deep penetration within individual cities and then co-fund the Cities' marketing efforts.

15. Use flexible and substantial **coop marketing to optimize Participating Contractor marketing costs**.

16. **Leverage federal programs** for messaging and marketing content (such as Better Buildings or Home Performance with ENERGY STAR) that will have broad market recognition.

## Consumer Financing — Desired Outcomes

Affordable and accessible financing is a key tool for building homeowner participation in the current economy. Studies show that consumers respond to financing programs that offer 5 percent or lower interest rate. Providing a variety of affordable financing tools that can be accessed "at the kitchen table" during the sales process would enable contractors to provide solutions for a range of financing needs. To provide affordable and accessible financing, we recommend the following:

17. Seek financing options and partners that **are scalable and sustainable**.

18. Engage private investment capital with **strategies similar to present solar leasing**.

19. Support **on-bill financing or repayment options** with either utility or third-party lenders.

20. Implement **loan-loss reserves** to stimulate interest rate reduction by lenders.

21. Stimulate **Property Assessed Clean Energy** (PACE) concept options.

22. Encourage the use of the **Energy Efficient Mortgage** (EMM) program and engage local mortgage broker and realtor partners trained in EEM implementation.

## Administration and Reporting — Desired Outcomes

23. Conduct ongoing assessment of **aggregated savings versus incentives paid**.

24. **Use random sampling to confirm energy savings** on an aggregate basis, not every home.

25. **Compare/refine predicted versus actual achieved savings** per normalized utility bill data.

26. Support development and adoption of **national standards** for data collection, calibration, and data transfer protocols.

## Quality Assurance and Quality Control — Desired Outcomes

We believe that QA/QC is essential for public good, quality assurance, and contractor monitoring/education. The QA/QC process must also be efficient and practical for all parties.

27. Assure contractors/raters are **fully informed of proper practices**; **enforce on a regular basis**.

28. **Assure contractor capability** through training, certification, mentoring, and quality verification (but keep it out of homeowner/contractor sales and construction process).

29. **Emphasize safety training, verification, and sanctions**, especially in combustion safety.

30. **Use field job verification as mentoring** (keeping it out of the sales/construction process), and include clear sanctions against repeat violators.

31. Provide expert advice to contractors via **online references plus field support on request**.

32. **Create robust feedback mechanism for homeowner** satisfaction or complaint with rapid follow-up procedures.

33. Need **clear system for reporting unethical or unprofessional contractor behavior**; recommend use BPI delisting process.

34. **Ensure protocols** (for example, BPI's Accreditation model) that minimize program expense and provide adequate oversight of the end product.

    A. QA inspectors should be **qualified to at least the same level as the contractors**.

    B. QA inspectors should be **third-party (non-implementer staff)** certified quality control inspectors preferably in BPI's Quality Assurance network.

    C. **QA costs should be fixed and predictable** if passed through to the contractors (or else exclusively paid by the program).

    D. **QA protocols should follow the performance standards adopted for the participant certification** for the entire program (BPI Standards for retrofit programs).

# *ENERGY UPGRADE CALIFORNIA™ CONTRACTOR'S WORKFLOW*

## INTRODUCTION:

The goal of the home performance industry is to reduce energy consumption in California homes, drive wealth to families through lower energy bills, reduce carbon emissions, and create thousands of jobs and small businesses. We strive to develop a system where energy efficiency is treated as a resource and public programs are designed to support private enterprise, investment, and innovation.

This document describes the sales process for a home performance project and visually outlines the pros and cons of (1) the current home performance workflow under the IOU Whole House Upgrade Programs as implemented under Energy Upgrade California (Energy Upgrade) and (2) the contractor's ideal workflow that provides homeowner friendly, minimally disruptive project delivery (see *Figure 1: Workflow under Energy Upgrade California Program* and *Figure 2: Best Case Scenario – Ideal Number of Home Visits*).

Most homeowners discover the whole-house approach to energy efficiency through a "pain point" such as a furnace replacement, high energy bills, or a cold and drafty house, or while planning a remodeling project. As a *considered purchase*, a home performance project is typically sold because the contractor is able to diagnose the problem, explain its causes, and implement an integrated solution tailored to that homeowner's goals and budget. In his/her role as "house doctor," the home performance contractor uses good communication skills, building science techniques, and years of construction experience to create a custom plan to provide not only energy savings, but additional non-energy benefits that are often the "deal makers," such as comfort, good indoor air quality, home safety, improved building durability, and the potential for increased resale value — to deliver a total value proposition that goes beyond simple return-on-investment.

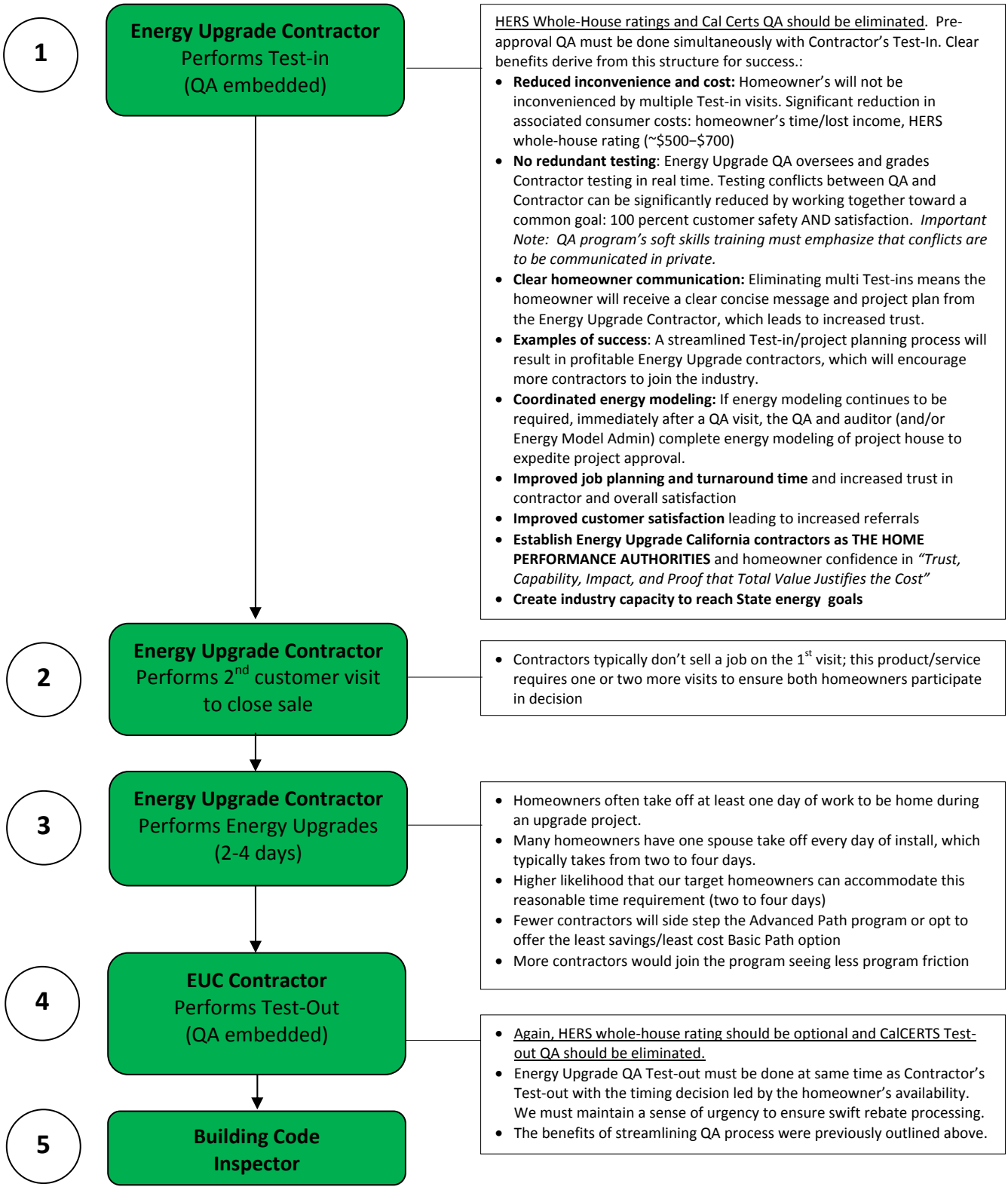
Making changes to a home, whether a remodel or home performance upgrade, requires homeowner participation and disrupts the household as work is performed. Current Energy Upgrade duplicative QA testing creates an additional challenge: homeowner confusion. Home performance contractors are equipped to address these challenges using industry best practices and building science standards to deliver maximum energy performance results with minimum demand on homeowner time and resources. The recommendations in this paper are designed to leverage the experience of home performance contractors to improve the workflow of the Energy Upgrade California program and generate successful projects with verifiable savings, customer satisfaction, and ultimately widespread uptake.

**Figure 1: Workflow under Energy Upgrade California™ Program**

Key: REINFORCE | REVISE | REMOVE

All homeowner costs below assume a 2,500 sq. ft. or less home with one HVAC system.

**Figure 2: Best Case Scenario —Ideal Number of Homeowner Visits**



# CONCLUSION:

Our goals are consistent with your goals. The current energy efficiency program is not designed to allow California to even come close to its goals. Streamlining will undoubtedly increase contractor participation and drastically increase the number of jobs performed. The high number of homeowner touch points, homeowner confusion, and the likelihood they would walk away from best home improvement they could ever make will be minimized. Let's work together to streamline the process for the betterment of all Californians and Energy Upgrade California contractors who want to rebuild it right. Again, we strive to develop a system where public energy efficiency programs are designed to support private enterprise, investment, and innovation, not hinder it. It's time we move forward together to reach our common goal. We thank you for your time and consideration.